

Abstract

Methods of inducing mucosal immunity in individuals against proteins and peptides are disclosed. The methods comprise the step of administering topically or by lavage into mucosal tissue selected from the group consisting of rectal, vaginal, urethral, sublingual and buccal, a nucleic acid molecule that comprises a nucleotide sequence that encodes a protein or peptide that comprises an epitope against which mucosal immunity is desired. The methods may be used to immunize an individual against a pathogen infection, hyperproliferative diseases or autoimmune diseases using nucleic acid molecules which encode proteins and peptides that share an epitope with a pathogen antigen or protein associated with cells involved in hyperproliferative diseases or autoimmune diseases, respectively,